
From Sputnik to Stem Cells

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I was chatting, over a nice bottle of wine, with some long-time friends of mine at the Breakthrough Institute. They advocate federal funding to advance clean energy technology in the U.S. They were curious about the ongoing litigation over NIH funding for human embryonic stem cell research. It was interesting to hear their view that the decision was a blow to human capital and strategic investment. They drew an analogy to the space race when they wrote:

“ The U.S. simply could not have won the space race without major federal investments in targeted education programs. Spurred on by the Soviet launch of Sputnik, Congress passed the National Defense Education Act in 1958, committing billions of dollars to equip a generation to confront the Soviet challenge. These investments developed the human capital necessary to put a man on the moon and invent the technologies that catapulted our world into the Information Age, from microchips and telecommunications to personal computing and the Internet.

The point was that almost all major advances in engineering, medicine and telecommunications track back to public investment. The policy question was not a narrow one of whether the Federal policy should fund human embryonic stem cell research, but, rather, does the U.S. want to maintain its leadership position in biomedicine. As is the case with clean energy technology, China and India are making massive public investments in human and physical capital to support innovation in biomedicine.

Their concerns appear to be supported by recent research (account required for this link). Aaron Levine at Georgia Tech published survey results suggesting the legal challenge to the NIH hESC research policy has negative economic impacts and undermines the development of human capital for all aspects stem cell research. Specific impacts include:

- Delaying hESC research or new projects
- Impeding existing research projects
- Adopting suboptimal research designs

Levine concludes:

“ More surprisingly, these results also suggest that the ruling and ongoing policy uncertainty have negatively affected non-hESC stem cell research.

Levine's findings are consistent with research conducted by CIRM (read *The Promise on Hold: The Impact of the NIH Stem Cell Funding Freeze*). CIRM surveyed researchers with NIH grants to perform hESC research. 38% believed the funding freeze would have significant impacts. Loss of postdoctoral researchers was a major potential impact. Consistent with Levine's findings, respondents to the CIRM survey indicated all forms of stem cell research would be hurt by the freeze.

Like my friends postulated, the loss of this critical human capital constitutes a blow to medical research broadly. As Levine suggests, to develop or maintain leadership in the field policies are needed that provide a clear legal and policy basis for ongoing research and innovation.

Tags: Levine, Lomax